

### ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

**TEST REPORT** 

FOR

#### 5.8 GHZ WIRELESS VIDEO / AUDIO / ALARM / DATA TRANSMITTER

FCC ID: NCYVTX5950

**MODEL NO: VTX5950** 

**REPORT NO: 01U1103-1** 

**ISSUE DATE: JANUARY 13, 2002** 

Prepared for TRANGO SYSTEMS, INC. 9939 VIA PASAR SAN DIEGO, CA 92126 – 4559, U.S.A.

Prepared by COMPLIANCE CERTIFICATION SERVICES 561F MONTEREY ROAD MORGAN HILL, CA 95037, U.S.A. TEL: (408) 463-0885 FAX: (408) 463-0888

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# **1. VERIFICATION OF COMPLIANCE**

COMPANY NAME:	TRANGO SYSTEMS, INC.
	9939 VIA PASAR
	SAN DIEGO, CA 92126 – 4559, U.S.A.

### CONTACT PERSON: CHRISTOPHER GUSTAF

TELEPHONE NUMBER: (858) 653 - 3900

EUT DESCRIPTION: 5.8 GHZ VIDEO / AUDIO / ALARM / DATA TRANSMITTER

MODEL NAME: VTX5950

DATE TESTED: 12/20/2001, 12/26/2001, 12/27/2001

LIMITS APPLY TO: FCC PART 15 SECTION 15.249										
TECHNICAL LIMITS	TEST RESULT									
Radiated Emission of Fundamental Frequency	No non-compliance found									
Radiated Emission of Harmonic Frequency	No non-compliance found									
Radiated Emission Outside the Band	No non-compliance found									
LIMITS APPLY TO: FCC	PART 15 SECTION 15.209									
Radiated Emission Digital Device	No non-compliance found									
LIMITS APPLY TO: FCC	LIMITS APPLY TO: FCC PART 15 SECTION 15.207									
AC Line Conducted Emission	No non-compliance found									

The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in CFR 47 PART 15 SUBPART C. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

Tested by: Thu Chan / Senior EMC Engineer Compliance Certification Services

St Ch

Reviewed by: Steve Cheng / Engineering Manager Compliance Certification Services

**Warning**: This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

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# 2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

The EUT is a professional quality system designed for sending composite NTSC or PAL video, audio and alarm signals using 5.8GHz wireless technology.

CHASSIS TYPE	METAL
Frequency Range	5740 – 5860 MHz
Number of Channels	14
Type of Emission	CONTINUOUS
Antenna Requirement	UNIQUE CONNECTOR (INVERSE SMA
	CONNECTOR)
Antenna Gain	2 dBi
No of External Connectors and Types	1 BNC, 2RCA, 1 RJ11, 1 Terminal Block
Power requirement	7V DC ADAPTER

### 3. TEST LOCATION

All emissions tests were performed at:

Compliance Certification Services 561F Monterey Road Morgan Hill, CA 95037

CCS has site descriptions on file with the FCC for 10 and 3 meter site configurations. CCS is a NVLAP accredited facility.

### 4. EQUIPMENT MODIFICATIONS

To achieve compliance Levels, the following change(s) were made during compliance testing:

### No changes were required in order to achieve compliance to class B levels.

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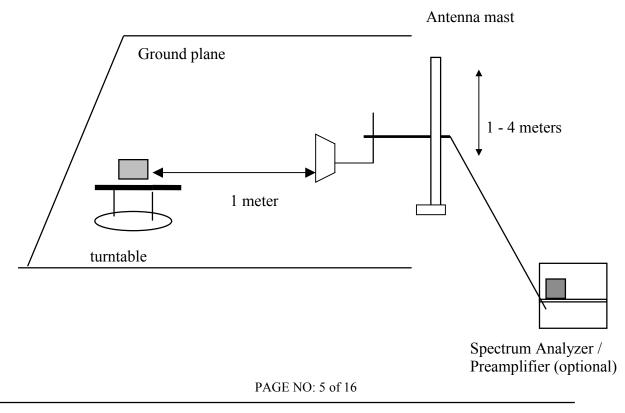
### 5. TEST RESULT SUMMARY

Radiated Emissions Test Requirement: 15.249(A)(B)(C)

**Measurement Equipment Used:** 

HP Spectrum Analyzer / 8566B (Cal Due: 5/4/02) HP Spectrum Display / 85662A (Cal Due: 5/4/02) HP Quasi-Peak Detector / 85650A (Cal Due: 5/4/02) HP Pre-Amp (P1) / 8447D (Cal Due: 8/21/02) CHASE Bilog Antenna / CBL6112 (Cal Due: 8/2/02) EMCO Horn Antenna / 3115 (Cal Due: 6/20/02) ARA Horn Antenna / MWH 1826 (Cal Due: 7/26/02) HP EMC Receiver / 8593EM (Cal Due: 6/20/02) MITEQ Pre-Amp (1 – 26GHz) / NSP2600-44 (Cal Due: 4/12/02) HP Microwave Amplifier (2 – 8GHz) / 11975A (Cal Due: 8/23/02) HP Harmonic Mixer & Horn Antenna (26.5 – 40GHz) / 11970A (Cal Due: 9/23/02) HP Harmonic Mixer & Horn Antenna (33 – 50GHz) / 1197Q (Cal Due: 6/26/03) FLEXCO SMA able / 20761; 16ft. Cable (loss: .9dB/ft @ 26GHz) High Pass Filter FSY(7.6 GHz) / 001

### TEST SETUP FOR MEASUREMENT OF FUNDAMENTAL FREQUENCY & HARMONIC



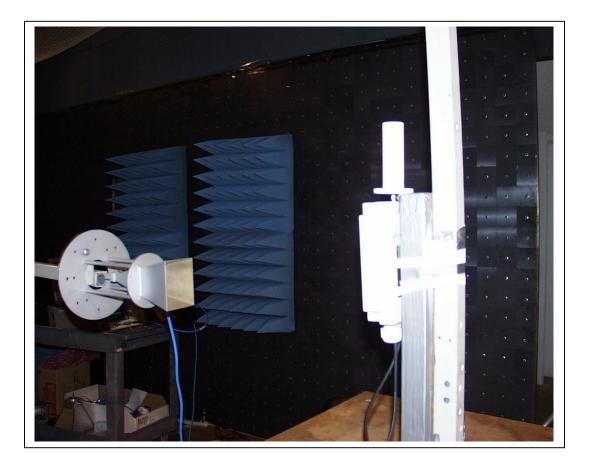
## **Test Procedures**

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Horn search antenna was place at a distance of 1 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.
- 3) The EUT was placed standing-up.

Setup Photo & Test Results:



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12/26/01 Compliance		leasurement tion Services, I	Morgan Hill O	pen Fiel	d Site										
Equipment for 1-22 GHz HP8566B Analyzer Miteq NSP2600-44 Preamp EMCO 3115 Antenna Cable: 16.0 feet FCC Measurement							Equipment for 22 - 58 GHz HP8566B Analyzer HP 11975A Amplifier (LO) HP 11970K External mixer/antenna Cable: IF Only (321 MHz)								
Average Me EUT S/N:	1 MHz F 10Hz Vi	nts: Resolution Ban deo Bandwidth <b>Low Channel</b>				Peak N	/leasuren 1MHz Ro 1MHz Vi	esolutio	on Bandwi ndwidth	dth					
VTX5950	Dist	Read Peak	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Peak Lim	Avg Lim		Avg Mar	Notes
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	.,
<u>5.739</u> 5.742	3.3 3.3	79.3 78.6	60.0 58.7	34.4 34.4	6.8 6.8	0.0	-9.5 -9.5	0.0	111.0 110.4	91.7 90.4	114.0 114.0	94.0 94.0	-3.0 -3.6	-2.3 -3.6	<u> </u>
			13.2	34.4	6.8	0.0	-9.5	0.0	65.3	90.4 44.9	74.0	94.0 54.0	-3.0	-3.0	V V
-					0.0				62.7			54.0	-0.7	-5.6	V
5.725	3.3	33.6			0.0	30.6				191					
5.725 11.478	3.3	61.7	47.5	39.1	9.9 9.9	-39.6	-9.5 -9.5	1.0		48.4 49.9	74.0 74.0				
5.725 11.478 11.476	3.3 3.3	61.7 62.7	47.5 49.0	39.1 39.1	9.9	-39.6	-9.5	1.0	63.6	49.9	74.0	54.0	-10.4	-4.1	Н
5.725 11.478 11.476 17.225	3.3 3.3 3.3	61.7 62.7 55.8	47.5 49.0 42.7	39.1 39.1 44.2	9.9 13.3	-39.6 -44.1	-9.5 -9.5	1.0 1.0	63.6 60.7	49.9 47.6	74.0 74.0	54.0 54.0	-10.4 -13.3	-4.1 -6.4	H V
5.725 11.478 11.476 17.225 17.217	3.3 3.3 3.3 3.3 3.3	61.7 62.7 55.8 55.3	47.5 49.0 42.7 42.2	39.1 39.1 44.2 44.1	9.9 13.3 13.3	-39.6 -44.1 -44.1	-9.5 -9.5 -9.5	1.0 1.0 1.0	63.6 60.7 60.1	49.9 47.6 47.0	74.0 74.0 74.0	54.0 54.0 54.0	-10.4 -13.3 -13.9	-4.1 -6.4 -7.0	H V H
5.725 11.478 11.476 17.225	3.3 3.3 3.3	61.7 62.7 55.8	47.5 49.0 42.7	39.1 39.1 44.2	9.9 13.3	-39.6 -44.1	-9.5 -9.5	1.0 1.0	63.6 60.7	49.9 47.6	74.0 74.0	54.0 54.0	-10.4 -13.3	-4.1 -6.4	H V H
5.725 11.478 11.476 17.225 17.217 22.955 28.695	3.3 3.3 3.3 3.3 1.5 1.0 missions	61.7 62.7 55.8 55.3 57.0 28.4 were found with Measurement I	47.5 49.0 42.7 42.2 45.0 28.4 thin 20dB und	39.1 39.1 44.2 44.1 32.7 33.4	9.9 13.3 13.3 16.6 0.0	-39.6 -44.1 -44.3 0.0 s B limit Amp	-9.5 -9.5 -9.5 -16.3 -19.9 ts up to 1 Preamp 0	1.0 1.0 1.0 0.0 0.0 0 Harm	63.6 60.7 60.1 45.6 41.9	49.9 47.6 47.0 33.6 41.9	74.0 74.0 74.0 74.0	54.0 54.0 54.0 54.0	-10.4 -13.3 -13.9 -28.4 -32.1	-4.1 -6.4 -7.0 -20.4 -12.1	H V H Noise Floor Noise Floor
5.725 11.478 11.476 17.225 17.217 22.955 28.695	3.3 3.3 3.3 1.5 1.0 missions f Dist	61.7 62.7 55.8 55.3 57.0 28.4 were found with Measurement I Distance to Am	47.5 49.0 42.7 42.2 45.0 28.4 thin 20dB und	39.1 39.1 44.2 44.1 32.7 33.4	9.9 13.3 13.3 16.6 0.0	-39.6 -44.1 -44.3 0.0 s B limit Amp D Corr	-9.5 -9.5 -16.3 -19.9 ts up to 1 Preamp C Distance	1.0 1.0 1.0 0.0 0.0 0 Harm Gain Correct	63.6 60.7 60.1 45.6 41.9 nonics.	49.9 47.6 47.0 33.6 41.9	74.0 74.0 74.0 74.0	54.0 54.0 54.0 54.0	-10.4 -13.3 -13.9 -28.4 -32.1 Avg Lim Pk Lim	-4.1 -6.4 -7.0 -20.4 -12.1 Average Fie Peak Field S	H V H Noise Floor Noise Floor
5.725 11.478 11.476 17.225 17.217 22.955 28.695	3.3 3.3 3.3 3.3 1.5 1.0 missions	61.7 62.7 55.8 55.3 57.0 28.4 were found with Measurement I	47.5 49.0 42.7 42.2 45.0 28.4 thin 20dB und Frequency tenna	39.1 39.1 44.2 44.1 32.7 33.4	9.9 13.3 13.3 16.6 0.0	-39.6 -44.1 -44.3 0.0 s B limit Amp D Corr Avg	-9.5 -9.5 -16.3 -19.9 (s up to 1 Preamp C Distance Average I	1.01.01.00.00.00 HarmGainCorrectField Str	63.6 60.7 60.1 45.6 41.9	49.9 47.6 47.0 33.6 41.9	74.0 74.0 74.0 74.0	54.0 54.0 54.0 54.0	-10.4 -13.3 -13.9 -28.4 -32.1	-4.1 -6.4 -7.0 -20.4 -12.1 Average Fie Peak Field S	H V H Noise Floor Noise Floor

Low Channel

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quipment f	or 1 22 C	U-7				Equipmo	ent for 22	59 CH-							
quipmenti		B Analyzer			Equipine	HP8566E									
		SP2600-44 Pr			HP 1197	,									
	EMCO 3	115 Antenna			HP 1197	0K Exter	nal mixer/	antenna							
	Cable:	16.0		feet			Cable: IF	Only (32	21 MHz)						
	FCC M	easurement													
verage Me	asuremer	nts:				Peak Me	asureme	nts:							
-	1 MHz R	Resolution Ban	ndwidth				1MHz Re	esolution	Bandwidt	h					
	10Hz Vio	deo Bandwidth	า				1MHz Vi	deo Banc	dwidth						
UT S/N:		Mid Channel													
/TX5950															
f	Dist	Read Peak	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Peak Lim	Avg Lim	Peak Mar	Avg Mar	Notes
	Dist feet	Read Peak dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Peak Lim dBuV/m	Avg Lim dBuV/m	Peak Mar dB	Avg Mar dB	Notes
f			Ŭ		-			HPF 0.0		<u> </u>		- U			Notes
f GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
f GHz 5.808	feet 3.3	dBuV 75.5	dBuV 55.7	dB/m 34.4	dB 6.9	dB 0.0	dB -9.5	0.0	dBuV/m 107.3	dBuV/m 87.5	dBuV/m 114.0	dBuV/m 94.0	dB -6.7	dB -6.5	V
f GHz 5.808 5.805	feet 3.3 3.3	dBuV 75.5 77.3	dBuV 55.7 58.2	dB/m 34.4 34.4	dB 6.9 6.9	dB 0.0 0.0	dB -9.5 -9.5	0.0	dBuV/m 107.3 109.1	dBuV/m 87.5 90.0	dBuV/m 114.0 114.0	dBuV/m 94.0 94.0	dB -6.7 -4.9	dB -6.5 -4.0	V H
f GHz 5.808 5.805 11.615	feet 3.3 3.3 3.3 3.3	dBuV 75.5 77.3 61.0	dBuV 55.7 58.2 47.0	dB/m 34.4 34.4 39.2	dB 6.9 6.9 9.9	dB 0.0 0.0 -39.7	dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 0.0 1.0	dBuV/m 107.3 109.1 60.9	dBuV/m 87.5 90.0 47.9	dBuV/m 114.0 114.0 74.0	dBuV/m 94.0 94.0 54.0	dB -6.7 -4.9 -13.1	dB -6.5 -4.0 -6.1	V H V
f GHz 5.808 5.805 11.615 11.615	feet     3.3     3.3     3.3     3.3     3.3	dBuV 75.5 77.3 61.0 62.0	dBuV 55.7 58.2 47.0 47.2	dB/m 34.4 39.2 39.2	dB 6.9 6.9 9.9 9.9	dB 0.0 0.0 -39.7 -39.7	dB -9.5 -9.5 -9.5 -9.5	0.0 0.0 1.0 1.0	dBuV/m 107.3 109.1 60.9 61.9	dBuV/m 87.5 90.0 47.9 48.1	dBuV/m 114.0 114.0 74.0 74.0	dBuV/m 94.0 94.0 54.0 54.0	dB -6.7 -4.9 -13.1 -12.1	dB -6.5 -4.0 -6.1 -5.9	V H V H
f GHz 5.808 5.805 11.615 11.615 17.423	feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	dBuV 75.5 77.3 61.0 62.0 52.4	dBuV 55.7 58.2 47.0 47.2 41.0	dB/m 34.4 39.2 39.2 45.7	dB 6.9 6.9 9.9 9.9 13.4	dB 0.0 0.0 -39.7 -39.7 -44.1	dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 0.0 1.0 1.0 1.0	dBuV/m 107.3 109.1 60.9 61.9 57.8	dBuV/m 87.5 90.0 47.9 48.1 47.5	dBuV/m 114.0 114.0 74.0 74.0 74.0	dBuV/m 94.0 94.0 54.0 54.0 54.0	dB -6.7 -4.9 -13.1 -12.1 -16.2	dB -6.5 -4.0 -6.1 -5.9 -6.5	V H V H V

## **Middle Channel**

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Miteq N EMCO : Cable: FCC M asurem I MHz F I0Hz Vi	BB Analyzer ISP2600-44 P 3115 Antenna 16.0 Measurement Resolution Ba ideo Bandwid	andwidth	feet			HP 1197 Cable: II easureme 1MHz R	B Anal 75A An 70K Ex F Only ents: esoluti	lyzer nplifier (LC	z)					
Miteq N EMCO : Cable: FCC M asurem I MHz F IOHz Vi H	ISP2600-44 P 3115 Antenna 16.0 Measurement eents: Resolution Ba ideo Bandwid ligh Channel	andwidth	feet		Peak M	HP 1197 HP 1197 Cable: II easureme 1MHz R	75A An 70K Ex F Only ents: esoluti	ion Bandw	z)	1				
EMCO : Cable: FCC M asurem I MHz F I0Hz Vi H	3115 Antenna 16.0 Measurement ents: Resolution Ba ideo Bandwid ligh Channel	andwidth	feet		Peak Me	HP 1197 Cable: II easureme 1MHz R	70K Ex F Only ents: esoluti	ternal mix (321 MHz ion Bandw	z)	1				
Cable: FCC M asurem I MHz F I0Hz Vi H	16.0 Neasurement Resolution Ba ideo Bandwid	andwidth	feet		Peak Me	Cable: II easureme 1MHz R	F Only ents: esoluti	(321 MHz	z)	I				
FCC M asurem I MHz F I0Hz Vi H	Veasurement eents: Resolution Ba ideo Bandwid ligh Channel	andwidth	feet		Peak Me	easureme 1MHz R	ents: esoluti	ion Bandw						
I MHz I I0Hz Vi H	Resolution Ba ideo Bandwid ligh Channel				Peak Me	1MHz R	esoluti		vidth					
I0Hz Vi H	ideo Bandwid ligh Channel								vidth					
н	ligh Channel	th				1MHz V	ideo B	andwidth						
Dist														
	Read Peak	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Peak Lim	Avg Lim	Peak Mar	Avg Mar	Notes
feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
3.3	79.3	60.3	34.5	6.9	0.0	-9.5	0.0	111.2	92.2	114.0	94.0	-2.8	-1.8	V
3.3	77.6	57.2	34.5	6.9	0.0	-9.5	0.0	109.5	89.1	114.0	94.0	-4.5	-4.9	Н
3.3	37.6	18.4		6.9	0.0	-9.5	0.0	69.6	50.4	74.0	54.0	-4.4	-3.6	V
									-					V
														Н
														V
							-							Н
														Noise Floor
1.0	28.7	28.7	33.4	0.0	0.0	-19.9	0.0	42.2	42.2	74.0	54.0	-31.8	-11.8	Noise Floor
nission	s were found	within 20dB ເ	under the	e FCC cla	ass B limi	its up to 1	0 Harr	monics.						
	Measurement F	Frequency			Amp						Avg Lim			nit
					D Corr						Pk Lim		•	
		0			Avg	•		• •			0	0	0	
		r							ngth		Pk Mar	Margin vs. Pe	ak Limit	
n N N	3.3 3.3 3.3 3.3 3.3 3.3 1.5 1.0 iission	3.3   77.6     3.3   37.6     3.3   63.7     3.3   64.9     3.3   52.3     3.3   52.3     1.5   57.0     1.0   28.7     issions were found     Measurement I     Distance to An     ead   Analyzer Read     F   Antenna Facto	3.3   77.6   57.2     3.3   37.6   18.4     3.3   63.7   51.4     3.3   64.9   52.0     3.3   52.3   40.5     3.3   52.3   40.5     1.5   57.0   45.0     1.0   28.7   28.7     issions were found within 20dB for the second sec	3.3   77.6   57.2   34.5     3.3   37.6   18.4   34.5     3.3   63.7   51.4   39.1     3.3   64.9   52.0   39.1     3.3   52.3   40.5   46.4     3.3   52.3   40.5   46.4     1.5   57.0   45.0   32.7     1.0   28.7   28.7   33.4     issions were found within 20dB under the     Measurement Frequency     Distance to Antenna   analyzer Reading     F   Antenna Factor   Antenna Factor	3.3   77.6   57.2   34.5   6.9     3.3   37.6   18.4   34.5   6.9     3.3   63.7   51.4   39.1   10.0     3.3   64.9   52.0   39.1   10.0     3.3   52.3   40.5   46.4   13.5     3.3   52.3   40.5   46.4   13.5     3.3   52.3   40.5   46.4   13.5     1.5   57.0   45.0   32.7   17.0     1.0   28.7   28.7   33.4   0.0     issions were found within 20dB under the FCC classions   Measurement Frequency   Distance to Antenna     ead   Analyzer Reading   F   Antenna Factor	3.3   77.6   57.2   34.5   6.9   0.0     3.3   37.6   18.4   34.5   6.9   0.0     3.3   37.6   18.4   34.5   6.9   0.0     3.3   63.7   51.4   39.1   10.0   -39.8     3.3   64.9   52.0   39.1   10.0   -39.8     3.3   52.3   40.5   46.4   13.5   -44.2     3.3   52.3   40.5   46.4   13.5   -44.2     1.5   57.0   45.0   32.7   17.0   -44.3     1.0   28.7   28.7   33.4   0.0   0.0     issions were found within 20dB under the FCC class B limiting bit ance to Antenna   D Corr   D Corr     ead   Analyzer Reading   Avg   Avg     F   Antenna Factor   Peak   Peak	3.3   77.6   57.2   34.5   6.9   0.0   -9.5     3.3   37.6   18.4   34.5   6.9   0.0   -9.5     3.3   37.6   18.4   34.5   6.9   0.0   -9.5     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5     1.5   57.0   45.0   32.7   17.0   -44.3   -16.3     1.0   28.7   28.7   33.4   0.0   0.0   -19.9     issions were found within 20dB under the FCC class B limits up to 1   Measurement Frequency   Amp   Preamp 0     ist   Distance to Antenna   D Corr   Distance   Average     ead   Analyzer Reading   Avg   Average   Calculate	3.3   77.6   57.2   34.5   6.9   0.0   -9.5   0.0     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5   1.0     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5   1.0     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0     1.5   57.0   45.0   32.7   17.0   -44.3   -16.3   0.0     1.0   28.7   28.7   33.4   0.0   0.0   -19.9   0.0     issions were found within 20dB under the FCC class B limits up to 10 Harr   Measurement Frequency   Amp   Preamp Gain   Distance Correc     ist   Distance to Antenna   <	3.3   77.6   57.2   34.5   6.9   0.0   -9.5   0.0   109.5     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   69.6     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   69.6     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5   1.0   64.5     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5   1.0   65.7     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5     1.5   57.0   45.0   32.7   17.0   -44.3   -16.3   0.0   46.0     1.0   28.7   28.7   33.4   0.0   0.0   -19.9   0.0   42.2     issions were found within 20dB under the FCC class B limits up to 10 Harmonics.	3.3   77.6   57.2   34.5   6.9   0.0   -9.5   0.0   109.5   89.1     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   109.5   89.1     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   69.6   50.4     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5   1.0   64.5   52.2     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5   1.0   65.7   52.8     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5   47.7     1.5   57.0   45.0   32.7   17.0   -44.3   -16.3   0.0   46.0   34.0     1.0   28.7   28.7   33.4   0.0   0.0   -19.9   0.0   42.2   42.2     issions were found within 20dB under the FCC class B limits up to 10 Harmonics.   Measurement Frequency	3.3 77.6 57.2 34.5 6.9 0.0 -9.5 0.0 109.5 89.1 114.0   3.3 37.6 18.4 34.5 6.9 0.0 -9.5 0.0 69.6 50.4 74.0   3.3 63.7 51.4 39.1 10.0 -39.8 -9.5 1.0 64.5 52.2 74.0   3.3 64.9 52.0 39.1 10.0 -39.8 -9.5 1.0 65.7 52.8 74.0   3.3 52.3 40.5 46.4 13.5 -44.2 -9.5 1.0 59.5 47.7 74.0   3.3 52.3 40.5 46.4 13.5 -44.2 -9.5 1.0 59.5 47.7 74.0   1.5 57.0 45.0 32.7 17.0 -44.3 -16.3 0.0 46.0 34.0 74.0   1.0 28.7 28.7 33.4 0.0 0.0 -19.9 0.0 42.2 42.2 74.0   issions were found within 20dB under the FCC class B limits up to 10 Harmonics.	3.3 77.6 57.2 34.5 6.9 0.0 -9.5 0.0 109.5 89.1 114.0 94.0   3.3 37.6 18.4 34.5 6.9 0.0 -9.5 0.0 69.6 50.4 74.0 54.0   3.3 63.7 51.4 39.1 10.0 -39.8 -9.5 1.0 64.5 52.2 74.0 54.0   3.3 64.9 52.0 39.1 10.0 -39.8 -9.5 1.0 65.7 52.8 74.0 54.0   3.3 52.3 40.5 46.4 13.5 -44.2 -9.5 1.0 59.5 47.7 74.0 54.0   3.3 52.3 40.5 46.4 13.5 -44.2 -9.5 1.0 59.5 47.7 74.0 54.0   3.4 0.0 0.0 -19.9 0.0 46.0 34.0 74.0 54.0   1.0 28.7 28.7 33.4 0.0 0.0 -19.9 0.0 42.2 42.2 74.0 54.0   1.0	3.3   77.6   57.2   34.5   6.9   0.0   -9.5   0.0   109.5   89.1   114.0   94.0   -4.5     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   69.6   50.4   74.0   54.0   -4.4     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5   1.0   64.5   52.2   74.0   54.0   -9.5     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5   1.0   65.7   52.8   74.0   54.0   -9.5     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5   47.7   74.0   54.0   -14.5     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5   47.7   74.0   54.0   -14.5     1.5   57.0   45.0   32.7   17.0   -44.3   -16.3   0.0   46.0   34.	3.3   77.6   57.2   34.5   6.9   0.0   -9.5   0.0   109.5   89.1   114.0   94.0   -4.5   -4.9     3.3   37.6   18.4   34.5   6.9   0.0   -9.5   0.0   69.6   50.4   74.0   54.0   -4.4   -3.6     3.3   63.7   51.4   39.1   10.0   -39.8   -9.5   1.0   64.5   52.2   74.0   54.0   -4.4   -3.6     3.3   64.9   52.0   39.1   10.0   -39.8   -9.5   1.0   65.7   52.8   74.0   54.0   -9.5   -1.8     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5   47.7   74.0   54.0   -14.5   -6.3     3.3   52.3   40.5   46.4   13.5   -44.2   -9.5   1.0   59.5   47.7   74.0   54.0   -14.5   -6.3     1.5   57.0   45.0   32.7

# High Channel

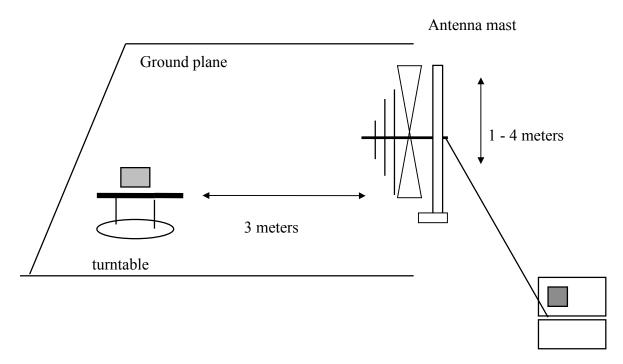
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Radiated Emissions Test Requirement: 15.209

**Measurement Equipment Used:** 

HP Spectrum Analyzer / 8566B (Cal Due: 5/4/02) HP Spectrum Display / 85662A (Cal Due: 5/4/02) HP Quasi-Peak Detector / 85650A (Cal Due: 5/4/02) HP Pre-Amp (P1) / 8447D (Cal Due: 8/21/02) CHASE Bilog Antenna / CBL6112 (Cal Due: 8/2/02)

### TEST SETUP FOR MEASUREMENT OF DIGITAL DEVICE



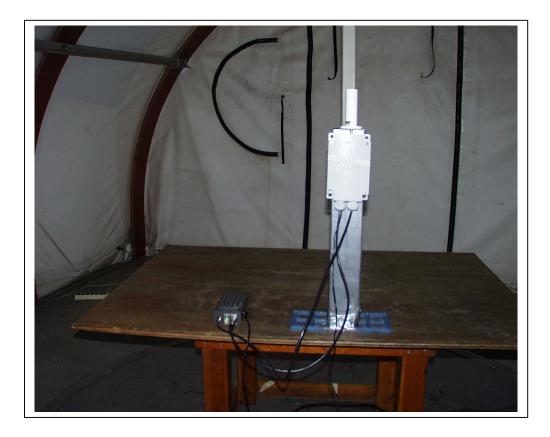
Preamplifier / Spectrum Analyzer

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## **Test Procedures**

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Bilog search antenna was place at a distance of 3 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.
- 3) The EUT was placed standing-up (x-axis).

## Test Setup Photos & Results:



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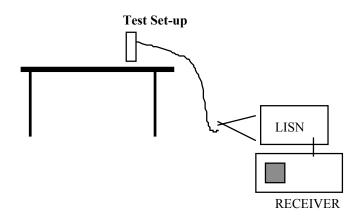
	FCC	C, VCCI, C CSA, TU EREY RO	ation ∷SPR, CE, V, BSMI, D AD, SAN	AUSTEL, N DHHS, NVL JOSE, CA S AX: (408) 4	1	Rep Date & 2	o <b>r</b> t #:	01U1103 011227A 12/27/01 Jesse Sa	1 11:03 AM	-	
	Test Cor	Descrip nfigura Type of	tion : Test:	5.8GHz EUT/ Vi FCC Cla	Systems, I Wireless \ deo & Aud iss B Audio Tra	√ideo / A io Signera	ator		smitter		- - - -
e	A-Site	- o	B-Site	O C-Site				6 Worst D	)ata	Descending	
Freq.	Reading	AF		Pre-amp		Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC_B	(dB)	(H/\/)	(Deg)	(Meter)	(P/Q/A)
12MHz S											
108.00	49.00	12.12	1.38	27.54	34.96	43.50	-8.54	3mV	0.00	1.00	P
216.00 324.00	46.20 45.70	11.84 15.51	1.96 2.50	27.17	32.83 36.47	46.00 46.00	-13.17 -9.53	3m∨ 3mV	180.00 180.00	1.00 1.00	P P
216.00	45.70 57.80	12.32	2.50	27.24	36.47 44.92	46.00 46.00	-9.55 -1.08	3mH	270.00	1.50	
216.00	56.70	12.32	1.96	27.17	43.82	46.00	-2.18	3mH	270.00	1.50	QP
324.00	50.00	15.11	2.50	27.24	40.37	46.00	-5.63	3mH	180.00	1.50	P
432.00	49.70	17.59	2.97	28.00	42.26	46.00	-3.74	3mH	0.00	1.50	P
OTHERS	S:	-				_					
229.50	52.00	12.98	2.02	27.12	39.88	46.00	-6.12	ЗmН	180.00	2.00	Р
Total dat	a#.8										
V.2a											

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# AC Line Conducted Emissions Test Requirement: 15.207

**Measurement Equipment Used:** 

Rhode & Schwarz EMI Receiver / ESHS-20 (Cal Due: 4/2/02) Fischer Custom Communication LISN / FCC-LISN-50/250-25-2 (Cal Due: 8/8/02) Electro Magnetic Line Filter / LMF 1393 (N.C.R.)



### **Test Procedure**

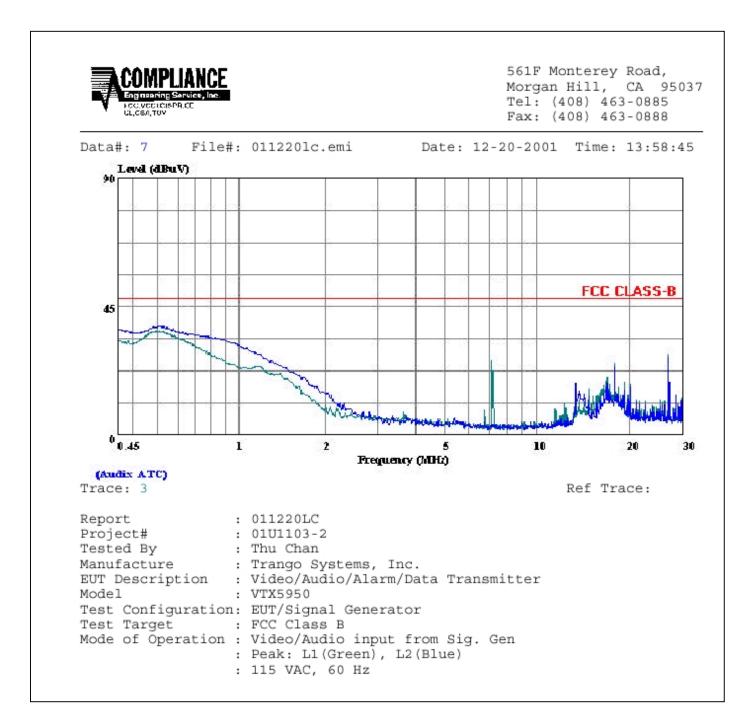
- 1. The DC is supplied by a AC adapter. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a normal tone and charge the battery at the same time.
- 2. Line conducted data was recorded for both NEUTRAL and HOT lines.

### **Test Setup Photos & Results:**

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